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(54) **Steam injector system.**

(57) A steam injector system comprises a plurality of steam injectors each being provided with with a check valve adapted for water supply, a check valve adapted for steam supply, a check valve adapted for overflow and a check valve adapted for discharge and the respective water check valves, steam check valves, overflow check valves and discharge check valves are connected. In another aspect, a steam injector system comprises a plurality of first to last stage steam injectors arranged in series with each other, the last stage steam injector being provided

with a relief valve disposed at a last stage overflow drain port, and a pressure pulsation absorbing device is disposed at least between the last stage overflow drain valve and the relief valve. A steam injector of an improved structure comprises an outer casing, a water nozzle disposed in the casing so as to extend axially therein, a central steam nozzle disposed inside the water nozzle coaxially therewith, a steam-water mixing nozzle disposed on a downstream side of the water nozzle and the central steam nozzle, and a peripheral steam nozzle moun-

ted to the casing at a portion to supply steam from an outside into the steam-water mixing nozzle, wherein the steam is supplied so as to flow inside and outside the water.



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-A-3 116 443 (CONRADS)	1	F 04 F 5/54
A	* page 4, line 35 - page 7, line 16; figures *	2-4	G 21 C 15/18
	---		F 22 D 11/02
A	GB-A- 391 619 (AUGER)	1,2	F 04 F 5/50
	* page 1, line 67 - page 2, line 29; figure 1 *		F 04 F 5/16
	---		F 04 F 5/46
A	US-A-4 932 842 (DIETRICK)	1,4	
	* column 3, line 38 - column 5, line 34; figure 1 *		

P,A	WO-A-9 110 832 (NICODEMUS)	5	
	* page 4, last paragraph - page 5, paragraph 1; figures *		

A	US-A-4 572 112 (CHIANG)	1	
	* column 1, line 53 - column 2, line 4; figure 1 *		

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			F 04 F
			G 21 C
			F 22 D
The present search report has been drawn up for all claims.			
Place of search		Date of completion of the search	Examiner
THE HAGUE		30-06-1993	VON ARX H P
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone		T : theory or principle underlying the invention	
Y : particularly relevant if combined with another document of the same category		E : earlier patent document, but published on, or after the filing date	
A : technological background		D : document cited in the application	
O : non-written disclosure		L : document cited for other reasons	
P : intermediate document		& : member of the same patent family, corresponding document	



CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

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- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.

namely claims: 1-6



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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-6: A steam injector system comprising a plurality of steam injectors arranged in parallel
2. Claims 7-10: A steam injector system comprising a plurality of steam injectors arranged in series
3. Claims 11-14: Details of a steam injector